

**Utah Department  
Of  
Transportation**

**INSPECTION  
MANUAL**

# **INSPECTORS MANUAL**

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## **CHAPTER 1- INSPECTION AND RESPONSIBILITIES**

### **Introduction**

This Manual is a guide and should not take the place of the Standard Specifications, The Plans, AASHTO Specifications, ASTM Specifications, The Manual of Instructions, Materials Manual Part 8, Covering Utah Industries.

The purpose of this manual is to give the inspector a general guideline for Roadside Development Inspection.

The inspector represents the Utah Department of Transportation and must make a detailed inspection of the work as it is being performed to ensure quality work for the public money being spent.

### **General Inspection**

Qualifications All Inspectors Should Have:

1. Dependability (attentive to job)
2. Conscientiousness (see that the state gets what is paid for)
3. Ability to communicate verbally and in writing with supervisor as well as the contractor
4. Knowledge of Safety Regulations
5. Good documentation skills (accurate, neat and timely with documentation)
6. Knowledge of Standard Specifications
7. Knowledge of Special Provisions of particular jobs
8. Ability to read and understand plans
9. Ability to generate and understand random numbers
10. Ability to read and understand survey stakes
11. Knowledge of the order of authority (chain of command)

**Preparation For Inspection:**

1. The Inspector, and Level IV Inspector and Resident Engineer must review the plans when they are first received. Contract pay items should be checked against the plan quantities for accuracy.
2. Engineer, assigns one or more inspection functions to inspectors, office and lab technicians as the work progresses.
3. Inspector reviews assigned functions and then reviews the contract plans, specifications, and special provisions, noting all provisions applicable to the assigned responsibilities.
4. Inspector reviews UDOT Minimum Sampling and Testing requirements, noting requirements for sampling, testing, and certificates of compliance for assigned responsibilities.
5. Inspector reviews sampling and testing requirements with Lab personal. A determination is made of how and when sampling and testing are to be done, who is to do them, and how to report the results.
6. Inspector reviews field staking of assigned items and discusses any questions that may arise with the Field Engineer, or Resident Engineer.
7. Inspector reviews documentation requirements and note keeping system for assigned items with Level IV Inspector, Field Office Technician, or Engineer.
8. Inspector reviews safety requirements for the assigned work, reviews MUTCD, and any other safety manuals that may be pertinent and discusses any anticipated problems with the Level IV Inspector or Engineer.
9. Inspector discusses the work with any sub ordinaries he is assigned to supervise, outlining, in detail, their responsibilities, methods, and procedures to be followed, documentation requirements, safety practices, equipment responsibilities, etc.
10. Inspector discusses the work with the contractor's supervisor in charge of doing the work he is assigned to inspect:
  - a. To learn of contractors planned methods, procedures, equipment, and men to be used.

- b. To get contractors proposed time schedule.
- c. To inform the contractor of any, of the following that may apply:
  - (1) Signing necessary before work starts.
  - (2) Safety requirements including flagging, advance warning devices, or pilot car operation.
  - (3) Traffic Control Requirements and Maintenance of traffic. (MOT).
  - (4) Certificates of Compliance needed before materials are incorporated into the work.
  - (5) Construction staking and stationing practice.
  - (6) Sampling and testing procedures and requirements.
  - (7) Method of measurements and method and time of payment for contract bid items.
  - (8) Any method or procedures proposed by the contractor that appear to be contrary to contract plans, specifications, or special provisions.
  - (9) Environmental protection requirements.
  - (10) Review CSS commitments (context sensitive solutions)
  - (11) Review Partnering concepts.
  - (12) To discuss any special problems that may have been identified during any of the above preparations.
  - (13) The Inspector discusses any questions or problems that may have been identified during their preparation with the Resident Engineer. These must be resolved so that inspection activities can be carried on with a clear understanding of what is to be done, how it is to be done, when it is to be done, and who is to do it.
  - (14) Obtain the proper field notes, diary, and equipment required for the assigned inspection functions.

## **Duties of Inspector - 00727**

Inspectors employed by the Department are authorized to inspect all work and materials furnished. Such inspection will extend to all or any part of the work and to the preparation, fabrication, or manufacture of the materials to be used. The inspector is not authorized to alter or waive the provisions of the contract. The inspector is not being authorized to issue instructions contrary to the plans and specifications, or to act as foreman for the contractor.

### **Level IV Inspector**

The Resident Engineer may authorize the Level IV inspector to:

1. Supervise all inspections, for the project assigned.
2. Inspect all different phases of the work.
3. Check to determine if proper test procedures are being followed.
4. Check test work sheets and reports.

The Level IV inspector will report all deviations from specification requirements immediately to the Resident Engineer, and verbally notifies the contractor's superintendent or foreman of deviations. Evaluates the extent of deviation from specification requirements to ascertain if work can be accepted as meeting substantial compliance by corrective action or if materials or other substandard work must be placed.

### **Project Inspector**

1. The Project Inspector is responsible to the Resident Engineer, and coordinates activities with the Level IV Inspector or Field Engineer.
2. Insure proper inspections over the construction phase assigned.
3. Checks to see that all material certifications, certificates of compliance and tests results are on file as required.
4. Assures that all required testing and sampling is done in accordance with applicable standards.
5. Maintains inspection file
6. Keeps project documentation and diary current.

**Lab Technician - Materials Manual Part 8 -1014**

1. Assures that all persons responsible for sampling of materials and performing and reporting on tests are qualified through WAQTC or TTQP Program.
2. Performs all project lab work in the manner prescribed by specifications.
3. Provides test results for project use
4. Coordinates with the Inspector or Resident Engineer to provide test results to the contractor.
5. Keeps current on specifications and special provisions.
6. Review of specifications, should be done before the project begins.
7. Maintains communication with Resident Engineer or Field Engineer.
8. Makes immediate notification to the Project Inspector and Resident Engineer of any noncompliance problems.
9. Uses judgment, but never waives a specification.

**Field Notes**

7. Use a black ballpoint pen. Avoid crowding. Keep books as clean as possible. Errors made should be corrected with a line drawn through the error and initialed. (No erasures allowed.)
8. Use standard symbols and abbreviations to keep notes compact.
9. Set pages in books ahead, so that data can be clearly indicated. Do not make statements that are capable of being understood in more than one way. Write down descriptions and make sketches for clarity. Be consistent in the way that data is recorded. (Write information so that if someone else picks up the books, they can clearly understand all data).
10. Show all pertinent measurements and observations. Incomplete and unclear notes result in lost time and additional costs in trying to decipher them. Erroneous data results in errors, general distrust of the party's work, and inability to defend the work to others. Accuracy in measurements and calculations of contract quantities, and with records that are neat, consistent, complete, and sufficiently

detailed are of prime importance. Records must be readily understandable by others who are unfamiliar with the contract work but are obliged to use or check these records.

11. UDOT's Central Laboratory will accept the Manufacturer's Certificate of Compliance and the test report for material requiring pretesting will accompany those items to the project site where they will be inspected for final acceptance.
12. UDOT Minimum Sampling and Testing Requirements must be thoroughly understood. It is the Project inspector's and Level IV Materials responsibility to make sure the minimum testing requirements have been met, for the project records. And any additional tests that may be required for the project control.
13. When test results do not meet the requirements of the specifications, corrective measures must be taken. Additional tests must be made after such correction. The project records shall contain the results of the original test, together with the supplemental tests. Adequate explanation must be provided to indicate the corrective measures taken.
14. **The inspector must not in any case act as a foreman for the contractor.** It is the inspector's duty to ensure all of the materials and finished work conform to the specification requirements and document these findings.
15. It is necessary for the inspector to become familiar with the markings on the field control stakes. Any error discovered will be brought to the attention of the Contractor, and Resident Engineer, Field Engineer or Level IV Inspector. Corrections should be made as soon as possible
16. Record all inspections in a daily diary. Fill out completely including: date, weather conditions, and signed by the inspector.

### **Field Book**

17. All inspections should be recorded in a field book, Include date, Quantity placed and signed by the inspector.



18. The inspector must document work on the project as it is being completed. Records must show what work listing the item and quantity of work done is performing. All pay items that are worked on or completed.

### **Electronic Field Book (Ipaq's)**

Download contract pay items and stationing information from the Project Accounting System and Estimate System to a hand held device at **PDBS Pocket PC Field book Download Center:**

<http://www.udot.utah.gov/index.php/m=c/tid=448>

### **VII. References**

The following is a list of printed materials available to the inspector that may be helpful for more details when questions arise.

1. State of Utah Standard Specifications
2. Special Provisions, supplementing the Standard Specifications, and published with the plans for each particular project.
3. Manual of Uniform Traffic Control Devices (MUTCD)
4. Construction Manual of Instruction

<h2 style="text-align: center;">Duties of Inspector</h2>
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SPEC	INSPECTION LEVEL	INSPECTION OBJECTIVE	INSPECTOR ACTIVITY
00727 – 1.12	Important	The inspector represents the Utah Department of Transportation and must make a detailed inspection of the work as it is being performed to ensure quality work for the public money being spent.	<p>Department Inspectors are authorized to inspect all work and materials furnished.</p> <p>Inspection may extend to the preparation, fabrication, or manufacture of the materials to be used.</p> <p>Do not alter or waive the contract provisions, issue instructions contrary to the Contract, or act as foreman for the Contractor</p> <p>Reject work or materials until any issue in question can be referred to and decided by the Engineer.</p>

**CHPATER ONE – Check List**

<b>Confirming</b>	<b>Attributes</b>
YES ( ) NO ( ) N/A ( )	Reviewed assigned functions and then reviewed the contract plans, specifications, and special provisions, noting all provisions applicable to the assigned responsibilities.
YES ( ) NO ( ) N/A ( )	Reviewed UDOT Minimum Sampling and Testing requirements, noting requirements for sampling, testing, and certificates of compliance for assigned responsibilities.
YES ( ) NO ( ) N/A ( )	Reviewed sampling and testing requirements with Lab personal. A determination is made of how and when sampling and testing are to be done, who is to do them, and how to report the results.
YES ( ) NO ( ) N/A ( )	Reviewed field staking of assigned items and discusses any questions that may arise with the Field Engineer, or Resident Engineer.
YES ( ) NO ( ) N/A ( )	Reviewed documentation requirements and note keeping system for assigned items with Level IV Inspector, Field Office Technician, or Engineer.
YES ( ) NO ( ) N/A ( )	Inspector reviews safety requirements for the assigned work, reviews MUTCD, and any other safety manuals that may be pertinent and discusses any anticipated problems with the Level IV Inspector or Engineer.

**NOTES:**

[illegible]

**NOTES:**

This image shows a blank sheet of white paper with horizontal ruling lines. There are 18 lines in total, evenly spaced from top to bottom. Each line begins with a small, dark gray arrowhead pointing to the right. The lines extend across the entire width of the page.

## **CHAPTER 2- TRAFFIC CONTROL - 01554**

Traffic Control is of major importance in the Construction and Maintenance of highways and bridges. Care should always be taken when working around or next to the motoring public.

Traffic Control devices provides positive guidance. In some instances, they supplement the regulations or warnings of other devices such as traffic signs or signals. In other instances, they are used alone, producing results that cannot be obtained by any other device. Accordingly, Traffic Control effectively conveys certain regulations and warnings that may not otherwise be clearly understandable.

However, Traffic Control Devices have definite limitations. They may be obscured in snow. They may not be clearly visible when wet, and may not be durable when subjected to heavy traffic. Despite these limitations, under favorable conditions, traffic control devices can convey warnings and information to the driver without diverting their attention from the roadway.

### **I. TRAFFIC CONTROL MANAGER**

The Resident Engineer assigns the Traffic Control Manager (TCM) to traffic control.

The TCM should have knowledge of the following manuals

1. Manual of Uniform Traffic Control Devices for Streets and Highways (Parts 1, 5 and 6)
2. The UDOT Construction, Manual of Instruction
3. Standard Drawings for Traffic Control (TC)
4. Standard Specifications for Traffic Control
5. Approved Traffic Control Plan & MOT Plan

### **II. DUTIES**

Keeps an up to date diary, complete with all details of the Contractor's traffic control.

Throughout the life of the project, checks all Traffic Control daily and records in a diary. Take pictures of all pertinent construction signing on the day of setup and when any significant changes are made.

Makes sure all signs, barriers, and channelizing devices conform to Standard Specifications and Drawings.

In case of an accident, contact the Region Safety/Loss Control, and Resident Engineer. Receives all pertinent information from investigating officers. Make sure all reports are filled out, and take any pictures of importance.

### **III. RESPONSIBILITIES**

1. Checks traffic control devices placed by the contractor, at least once each operating day and after any changes are made to the traffic control set up during a workday.
2. Checks traffic control during the night immediately following initial set up and after major changes to the traffic control to determine that the level of retro reflectivity is adequate and the devices are clearly visible and legible.
3. Temporarily shutdown the contractor, if any circumstances are recognized that would be life threatening, until all necessary corrections are complete and conditions are safe for all parties.
4. Evaluates traffic and pedestrian flow in and adjacent to construction area.
5. Checks and evaluates contract traffic control layout, found in approved Traffic Control/ MOT Plans.
6. Immediately bring to the Contractor's attention, any deficiencies in the Contractors Traffic Control. That is not from the Traffic Control Plan or MOT Plan.
7. Checks pavement markings for proper removal of obliterated paint lines and that new temporary traffic control lines are adequate.

The following are things the UDOT Inspector should be looking to enforce on job-sites

1. All traffic control devices meet NCHRP 350 compliance.

2. Reflective sheeting on signs and devices meet UDOT specifications.
3. All traffic control signs and devices are to be clean and in good working condition.
4. Signs need to be checked for size and spacing.
5. Check for double signs when appropriate (when signs are placed on both left and right side of roadway)
6. Spacing between channelization devices are to be checked.
7. Check to see if Traffic Control is set up as per Traffic Control Plan.
8. Check length of the Taper to the speed limit.
9. Check to see if traffic control supervisor is ATSSA Certified or UDOT Certified.
10. Arrow boards and changeable message boards should be checked for the following:

Proper size for the road

Proper alignment to the road

Checked for alignment to the driver

Checked to be level with the road

All lights or letters to be working

Proper brightness for day or night operation

Legends can be read in time allowed on CMB

Limit of two legends in series on CMB

11. UDOT Resident Engineer should receive certified crash tested letter on each device, prior to each job starting.

#### **IV. TRAFFIC CONTROL DEVICES**

The quality of the work zone devices, have been divided into three categories. They are acceptable, marginal, and unacceptable. At the time of the initial set up or at the time of major changes of traffic control, 100 percent of each type of device (signs, vertical panels, drums, warning lights, arrow panels, changeable message signs, pavement tape and raised pavement markers) shall be classified as “acceptable”. Throughout the duration of the project, the number of acceptable devices may decrease to 75 percent of the initial quantity, as a result of damage and /or deterioration during the course of the work with the remainder of the



devices in the marginal category. Unacceptable devices or situations that are found on the job site shall be replaced or the situation corrected within 12 hours of notification or as specified in the contract specifications.

1. **ACCEPTABLE:** devices that meet the quality requirements herein for this classification and all other requirements such as design, size, color, weight, etc. in the plans and specifications, shall be considered to be acceptable for use on highway construction or contract maintenance projects.
2. **MARGINAL:** The term “Marginal” for the purpose of this manual means “marginally acceptable”, reaching the lower end of acceptability. Devices that meet the quality criteria for marginal as described in this manual may remain in the work zone until their number exceeds the specified percentage of that type of device or until it is determined that they have become unacceptable.
3. **UNACCEPTABLE:** Devices in this category shall not be delivered to the job site. When found in the work zone, they shall be replaced or repaired within 12 hours of notification or as contained in the contract specifications.

Application of this standard provides the means to meet the requirements of Section 1A-2 of the Federal Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD) which states:

“Maintenance of devices should be to high standards to assure that legibility is retained, that the device is visible, and that it is removed if no longer needed. Clean, legible, properly mounted devices in good working condition command the respect of vehicle operators and pedestrians.”

## **1. WORK ZONE SIGNS**

### **Acceptable**

There are several abrasions on the surface but very little loss of lettering. There has been no touch-up of the lettering. This message is legible per the design criteria of the MUTCD.

### **Marginal**

Of the several surface abrasions throughout the sign face, many are within the individual letters of the message. The sign surface is free of

any residue. Although some color fading is evident, the background color and reflectivity are still apparent at night. The message is legible per the design criteria of the MUTCD.

### **Unacceptable**

Signs with asphalt splatted or cement slurry on them, of an amount similar to the abrasions that are evident throughout the face of the sign are unacceptable. Some letters have a loss of more than 50 percent. There is a noticeable color fading. The message is illegible per the design criteria of the MUTCD.

## **2. Type I, II, III Barricade Panels or Vertical Panels**

### **Acceptable**

Panels are not deformed to an extent so as to decrease the panels target value. There are several abrasions on the surface but very little loss for reflective sheeting. The Orange is vivid and the stripes provide contrast.

### **Marginal**

There are numerous surface abrasions throughout the panel surface. Some color fading is evident, however, it is free of large areas of residue. Or missing reflective material. The Orange is vivid and the stripes provide contrast.

### **Unacceptable**

The surface is marred over a high percentage of the panel area. There is noticeable loss of reflectivity and obvious color fading. Panels with asphalt splatter and/or cement slurry, or any combination of missing and covered reflective material would make the panel unacceptable.

## **3. DRUMS**

### **Acceptable**

The sheeting has only minor tears and scratches. Any dents in the drum that does not seriously reduce the reflectivity. The drum maintains its intended original shape.

### **Marginal**

The sheeting has few tears and scratches; however, it is free of large areas of residue, or missing reflective material. Any large dents in the

Drum that reduces the effectiveness of only the upper reflective band, and the drum strength is not reduced. The drum maintains its intended original shape.

### **Unacceptable**

Large areas of missing reflective material on the fractured upper area make a drum unacceptable. Drums with asphalt Splatter and/or cement slurry, or any combination of missing and covered reflective material, similar in area to the missing reflective material would also make a drum unacceptable. Substantial deformation of a drum, which reduced the original dimensions, may cause the drum to be considered as “unacceptable” even if other parameters are still “acceptable”.

## **4. Warning Lights**

### **Acceptable**

More than 90 percent of the Type A or C and 100 percent of Type B lights meeting the MUTCD specifications are working.

### **Marginal**

Not less than 90 percent of the Type A or C warning lights meeting the MUTCD specifications are working with no more than 3 adjacent lights failing.

### **Unacceptable**

Less than 90 percent of the Type A or C warning lights meeting the MUTCD specifications, or more than 3 adjacent lights failing, or more than 1 Type B warning light failing for more than 12 consecutive hours or as specified in the contract documents.

## **5. Arrow Panels**

### **Acceptable**

Not more than one lamp out, in a stem. No lamps out in the arrowhead, and dimming properly.

### **Marginal**

2 or less, lamps in a stem out. No lamps out in the head Dimming properly.

**Unacceptable**

Any lamp out in the head, or more than 2 lamps out in the stem, or arrow panel not dimming properly.

**6. Changeable Message Signs****Acceptable**

90 percent or more of the pixels per character module are operating properly

**Marginal**

No less than 90 percent of the pixels per character module are operating properly.

**Unacceptable**

Less than 90 percent of the pixels per character module are operating properly or not performing within the criteria of the MUTCD.

**7. Pavement Tape and Paint****Acceptable**

All pavement Marking Tape or paint required (solid and skip lines) is in place and meet's all material specifications.

**Marginal**

No more than 10 percent of all tape, paint, message or symbol missing. Or no more than 2- consecutive, skip lines. And no more than 50 continuous feet, of solid line is missing.

**Unacceptable**

More than 10 percent of all tape, paint, message or symbol missing. More than two consecutive skip lines. Or more than 50 continuous feet, of solid line is missing.

**8. Temporary Raised Pavement Markers****Acceptable**

All temporary raised pavement markers required are in place and meet all

material specifications.

### **Marginal**

No more than 10 percent of the total raised pavement markers or no more than three consecutive temporary raised pavement markers are missing

### **Unacceptable**

More than 10 percent of the total raised pavement markers or no more than three consecutive temporary raised pavement markers are missing

## **TRAFFIC CONTROL DEVICES**

Should:

Meet UDOT Standards,

Fill a need

Command Attention

Convey a Clear and Simple Meaning

Command respect of Road Users

Give Adequate Time for Proper Response

## Traffic Control

SPEC	INSPECTION LEVEL	INSPECTION OBJECTIVE	INSPECTOR ACTIVITY
01554	Important	<p>Ensure the safety of the traveling Public</p> <p>Ensure Traffic Control plan has been approved.</p> <p>Ensure devices and systems meet NCHRP-350 report requirements</p> <p>Ensure traffic signs conform to the MUTCD.</p> <p>Ensure Traffic Control Maintainer is Certified by the Department or American Traffic Safety Services Association (ATSSA)</p> <p>Flaggers have a current flagging certificate and must present proof of certification upon request by the Department.</p>	<p>Before erecting signs: Inspect condition of sign panels and supports and any allowable repairs that have been made.</p> <p>Perform and document nighttime inspection to verify that sign has proper illumination</p> <p>Traffic Control Maintainer has completed a daily record of traffic control activities using a form acceptable to the Resident Engineer Form C-110</p> <p>Inspector has made a daily note in his/her diary on the traffic control and condition of roadway.</p>

**CHPATER TWO – Check List**

<b>Confirming</b>	<b>Attributes</b>
YES ( ) NO ( ) N/A ( )	Reviewed assigned functions and then reviewed the contract plans, specifications, and special provisions, noting all provisions applicable to the assigned responsibilities.
YES ( ) NO ( ) N/A ( )	Reviewed Contractors approved Traffic Control Plan & MUTCD
YES ( ) NO ( ) N/A ( )	Contractor person for Traffic Control Maintainer has been Certified by the Department or by the American Traffic Safety Services. And Certification is current.
YES ( ) NO ( ) N/A ( )	Flaggers have a current Flagging Certification and comply with to the Department's Flagger Training Handbook
YES ( ) NO ( ) N/A ( )	Contractor TCM has submitted a C-110 or other inspection form approved by the Resident Engineer. Which has been inspected at least four times each day, at least one of which must be conducted during nighttime hours
YES ( ) NO ( ) N/A ( )	Inspector reviews safety requirements for the assigned work, reviews MUTCD, and any other safety manuals that may be pertinent and discusses any anticipated problems with the Level IV Inspector or Engineer.
YES ( ) NO ( ) N/A ( )	Completed a Daily Diary on all events for the day.
YES ( ) NO ( ) N/A ( )	Have reviewed all documentation / Certifications and handed all information into the Resident Engineers office.

**NOTES:**





**NOTES:**



**CHAPTER 3- MOBILIZATION - 01285****Introduction**

Mobilization consists of the operations and preparatory work that the Contractor must perform to become ready to perform the work or an item of work.

There are no quality requirements for this item. The Inspector though should record pertinent information in the daily report or project diary.

The Inspector does not have to prepare a Source Document for this item or to measure this item payment is generated on PDBS.  
(Project Development Business System)

## Mobilization – Check List

<b>Confirming</b>	<b>Attributes</b>
YES ( ) NO ( ) N/A ( )	Reviewed assigned functions and then reviewed the contract plans, specifications, and special provisions, noting all provisions applicable to the assigned responsibilities.
YES ( ) NO ( ) N/A ( )	Document in Daily Diary the date, Weather, equipment and all activities of Mobilization
YES ( ) NO ( ) N/A ( )	Ensure Contractors equipment is on project Right of Way
YES ( ) NO ( ) N/A ( )	Ensure sufficient labor and equipment are on the site to begin work.
YES ( ) NO ( ) N/A ( )	Obtain all required name and number from the contractor (Super, Foremen, Traffic Control Super, etc.)

**NOTES:**



**NOTES:**



## **CHAPTER 4- Clearing & Grubbing - 02231**

### **General**

Clear, grub, remove and dispose of trees, stumps, and debris within the designated limits of the roadways, channels, easements, and other designated areas.

### **Related Sections:**

01355 Standard Specifications, Environmental Protection

01571 Standard Specifications, Temporary Environmental Controls

02221 Standard Specifications, Remove Structure and Obstruction

### **Preparation:**

Assure that disposal operations do not violate permit requirements or local ordinances. If some of the material will be left on the project assure that the material is properly broken down or processed and its placement does not jeopardize contract work or future work.

Review the plans, special provisions and Right of Way agreements to be aware of any restrictions of clearing and Grubbing.

Observe the Contractor's operations to assure that the work is completed as specified.

Assure that the Contractor is aware of and does not violate, environmental restrictions, or private property.

Assure that the Contractor is aware of areas where the contract does not allow any disturbance.

Erosion and sediment control is in place or will be constructed and maintained according to the Erosion control plan.

That proper traffic control is provided and dust is controlled.

### **Documentation:**

Document all activities in the daily diary and record all quantities in field book or Ipac's.

## Clearing and Grubbing

SPEC	INSPECTION LEVEL	INSPECTION OBJECTIVE	INSPECTOR ACTIVITY
02231	Intermittent	<p>Ensure environmental controls in place prior to land-disturbing activity.</p> <p>Ensure clearing and grubbing operation confined to proposed construction limit.</p> <p>Ensure Contractor will use acceptable disposal methods and does not violate Federal or State laws.</p> <p>Backfill all stump holes, cuts, depressions and other holes resulting from Clearing and Grubbing.</p>	<p>Measure environmental controls and document</p> <p>Review contractor – employee certification (if applicable)</p> <p>Document all activities in Daily Diary.</p> <p>Document equipment</p> <p>Document station to station cleared and grubbed.</p>

## CLEARING & GRUBBING – Check List

Confirming	Attributes
YES ( ) NO ( ) N/A ( )	Reviewed assigned functions and then reviewed the contract plans, specifications, and special provisions, noting all provisions applicable to the assigned responsibilities.
YES ( ) NO ( ) N/A ( )	Ensure Contractor will use acceptable disposal methods and does not violate Federal or State laws.
YES ( ) NO ( ) N/A ( )	Confirm the area to be Cleared & Grubbed has been measured for payment
YES ( ) NO ( ) N/A ( )	Review with Contractor the disposal operation of material to be Cleared & Grubbed.
YES ( ) NO ( ) N/A ( )	Check any damage to, or encroachment on, private property by the Contractor or any undue damage to vegetation outside the staked Clearing & Grubbing limits should be brought to the Contractor's attention immediately and recorded by the inspector.
YES ( ) NO ( ) N/A ( )	Completed a Daily Diary on all events for the day.
YES ( ) NO ( ) N/A ( )	Have reviewed all documentation / Certifications and handed all information into the Resident Engineers office.




Item # 17	CLEARING & GRUBBING				Eng'r Party	Date
DATE	STA - From	STA - TO	WIDTH	QUANTITY	Verified By	Weather
5/12/2008	1 + 00 Rt.	6 + 00 Rt.	60.0 ft.	6.689	BM	1 acre = 43560 ft sq.
5/12/2006	7 + 00 Lt.	9 + 00 Lt.	100.0 ft.	0.459	BM	500 ft. X 60.0 ft. = 30,000 ft. sq. = 0.689 acre 43560 ft. sq./acre
5/13/2006	25 + 00 Rt.	26 + 00 Rt.	300.0 ft.	0.689	BM	
5/13/2006	30 + 15 Lt.	32 + 75 Lt.	400.0 ft.	2.388	BM	200 ft. X 100 ft. 2000 ft. sq. = 0.459 acre 43560 ft. sq./acre
5/13/2006	40 + 50 CL	45 + 50 CL	75.0 ft.	0.852	BM	100 ft. X 300 = 30000 ft. sq. = 0.689 acre 43560 ft. sq/acre
						260 ft. X 400 ft. = 140000 ft. sq. = 0.852 acre 43560 ft. sq/acre


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**CHAPTER 10 – Untreated Base Course - 02721****General:**

Production, construction, and compaction of untreated base course material.

**Related Sections:**

01572: Dust Control and Watering

**Preliminary Preparation:**

Study the Standard Specifications, Special Provisions, and project plans. Study the typical road sections, the required depth and width, and the slope ratio. Look for special instructions pertaining to UTBC in the Special Provisions. Read the Manual of Instruction for Construction, Materials, and Safety.

Know the chain of command and authority in your organization and how to escalate issues up to the next level. Never change plans or specifications without consent of the Resident Engineer. Review and know section on required reports and documentation.

**Material Description:**

Untreated Base Course consists of the construction of a base course composed of natural gravel, crushed rock, or crushed slag placed on a prepared subgrade. The mineral aggregate shall conform to the required specifications.

**Source Requirements:**

At least 5 days prior to hauling the untreated base course material to the project, the Contractor must submit the following test data on the material:

1. Name of supplier and source
2. Dry Rodded Unit Weight, AASHTO T 19
3. LL/PI, AASHTO T 90/T 89
4. Aggregate Wear, ASSHTO T 96
5. Gradation, AASHTO T 11 / AASHTO T 27
6. CBR, AASHTO T 193
7. Fracture Face, ASSHTO TP 61

**Acceptance:**

The Special Provision Section 02721S distinguishes three types of UTBC placements and have different testing frequencies. They are as follows:

**Type I Placement – Pavement Section.**

Gradation – 1 per subplot of approx. 500 yd<sup>3</sup>.

Maximum Density (Proctor) – 1 test per 10,000 yd<sup>3</sup>

Density & random moisture check - 1 per subplot of approx. 2500 yd<sup>2</sup>.

97% avg. required, with no test below 94% compaction.

**Type II Placement – placed under curb, curb & gutter, driveways, pedestrian ramps, sidewalk, waterways, flatwork, etc.**

Maximum Density (Proctor) – 1 per 10,000 yd<sup>3</sup>.

Gradation, random moisture, and Density tests as follows:

10,000 feet	Curb, Curb & Gutter -	1 per subplot of
3000 yd <sup>2</sup>	Sidewalk -	1 per subplot of
25,000 ft <sup>2</sup>	Driveways, ramps, flatwork -	1 per subplot of

90% avg. density required, with no test below 87% compaction.

**Type III Placement – placed on shoulder of road.**

Determine moisture content a minimum of twice daily.

Density is determined by visual inspection and documentation.

(A minimum of 2 passes with a roller, or as directed by the Engineer)

The material must meet the gradation requirements according to specifications. A price reduction or rejection of the material may apply if it is out of specification.

Maximum Density (or Proctor) is determined by AASHTO T-180, Method D.

Moisture content must be within 2 percent of optimum moisture as determined by AASHTO T-180.

Materials not meeting the gradation requirements may be allowed to remain in-place at the discretion of the Engineer, provided density requirements are met.

Additional material may not be placed on any unaccepted layer. When directed by the Engineer, the contractor must remove or correct products found defective after placement and replace or remix with acceptable products at no additional cost to the department.

**Hauling and Placing:**

Untreated Base Course is hauled from the pit and placed on a prepared sub-grade. Do not place on any frozen surface. Refer to Section 01572 for Dust Control and Watering requirements. Place layers in constant thickness and compact each layer to a thickness not exceeding 6 inches deep.

Samples are obtained from the area of placement immediately after the aggregate has been processed and spread, but prior to compaction, of each lift. During the spreading and mixing, water shall be added (if necessary) to bring the material to within 2 percent of optimum moisture content for proper compaction.

Care shall be taken to prevent segregation during processing. In no case shall contamination be allowed. Material shall be confined within the typical section with minimal waste. Do not exceed maximum thickness limits.

**Finishing:**

Finish grade shall be smooth and uniform to Line and Grade according to plans and specifications with surface deviations less than 3/8 inch in 10 feet, in any direction. (This may be checked with a string line or straightedge.)

The slope ratio should be checked for accuracy and uniformity. It is very important that all loose and segregated areas be repaired. Before application of prime, a tight uniform surface must be achieved, meeting the requirements of the specifications.

### UNTREATED BASE COURSE

SPEC	INSPECTION LEVEL	INSPECTION OBJECTIVE	INSPECTOR ACTIVITY
02721	Submittals	Contractor to submit mix design and required test results.	Check with office on approval from Region lab.
	Proctor Sample	Sample every 10,000 yd <sup>3</sup>	Track ticket quantities
	Sieve Analysis sample	3-5 samples per day, depending on production and Placement Type (see above)	Sample after mixing by equipment
	Density Test & moisture content	Type I - Ensure 97% avg., with no test below 94% & $\pm 2\%$ of optimum moisture. Perform 1 test per subplot of 2500 yd <sup>2</sup>	Perform density tests & document results
	Periodically	Type II – ensure 90% avg., with no test below 87%, $\pm 2\%$ optimum moisture.  Type III – Ensure proper compaction and moisture.  Ensure proper line & grade	Perform density tests & document results  Visual inspection, and document equipment used and rolling pattern.  String line grade and document

**UNTREATED BASE COURSE – Check List**

<b>Confirming</b>	<b>Attributes</b>
YES ( ) NO ( ) N/A ( )	Reviewed assigned functions and then reviewed the contract plans, specifications, and special provisions, noting all provisions applicable to the assigned responsibilities.
YES ( ) NO ( ) N/A ( )	Reviewed Contractors approved Traffic Control Plan & MUTCD
YES ( ) NO ( ) N/A ( )	Contractor person for Traffic Control Maintainer has been Certified by the Department or by the American Traffic Safety Services. And Certification is current.
YES ( ) NO ( ) N/A ( )	Flaggers have a current Flagging Certification and comply with to the Department's Flagger Training Handbook
YES ( ) NO ( ) N/A ( )	Contractor TCM has submitted a C-110 or other inspection form approved by the Resident Engineer. Which has been inspected at least four times each day, at least one of which must be conducted during nighttime hours
YES ( ) NO ( ) N/A ( )	Inspector reviews safety requirements for the assigned work, reviews MUTCD, and any other safety manuals that may be pertinent and discusses any anticipated problems with the Level IV Inspector or Engineer.
YES ( ) NO ( ) N/A ( )	Completed a Daily Diary on all events for the day.
YES ( ) NO ( ) N/A ( )	Have reviewed all documentation / Certifications and handed all information into the Resident Engineers office.



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## **Chapter 11 - Inspection of Wire Enclosed Riprap – 02372**

### **General:**

Materials and procedures for wire enclosed riprap.

### **Related Sections:**

02056: Common Fill

02075: Geotextiles

02316: Roadway Excavation

02324: Compaction

03211: Reinforcing Steel and Welded Wire

### **Checklist**

1. Has material source been accepted?
2. Have material certifications been submitted for basket material?
3. Is rock angular, well graded, 10” minus in size, and free of seams or cracks?

### **Preparation of Sub Grade**

1. Remove all brush, trees, stumps, and other objectionable materials.
2. Provide a firm foundation that is uniform to line and grade.
3. If required, provide geotextile separation fabric.

### **Building of Baskets**

1. Secure all perimeter edges with lacing wire.
2. Tightly loop binding wire around every other mesh opening along the seams, alternating single and double loops.
3. Place a diaphragm of the same mesh and gauge as the body of the wire basket module when the length of the basket exceeds one and one half times its horizontal width. Divide the diaphragms into cells whose lengths do not exceed the horizontal widths of the basket.

4. Protect the wires from being broken.

### Filling the Baskets

1. Use a loading frame if needed to prevent damage to the wire baskets.
2. If needed, hand place stone around outer edges so as not to lose smaller gradation of stones through the openings in mesh.
3. Secure lid of baskets in same manner of tying as the assembly of the walls.

### Placement of Baskets

1. Begin assembly and stone placement at the lowest layer or row.
2. Tie each subsequent layer or row to the one below and adjoining structure
3. Use wire equal to that required for selva wire.
4. Install anchors according to manufacturer's recommendations.

#### WIRE ENCLOSED RIPRAP

SPEC	INSPECTION LEVEL	INSPECTION OBJECTIVE	INSPECTOR ACTIVITY
02372	Submittals	Ensure that samples/ submittals are in for rock source, Wear and Soundness tests.	Check with lab / office
		Ensure that cert's are in for baskets	Get cert's from contractor
02372	Subgrade Prep.	Provide a firm subgrade	Visual inspection & documentation
02372	Intermittent	Ensure proper assembly and installation of baskets and quality of rock.	Visual Inspection & documentaion

## **Chapter Eleven - Inspection of Riprap – 02373**

### **General:**

Materials and procedures for placing loose riprap, hand placed riprap, compacted riprap, and plated riprap.

### **Related Sections:**

02075: Geotextiles

### **Checklist**

1. Has material source been accepted?
2. Is rock angular, well graded, and free of seams or cracks?

### **Preparation of Sub Grade**

1. Remove all brush, trees, stumps, and other objectionable materials.
2. Provide a firm foundation that is uniform to line and grade.
3. If required, provide geotextile separation fabric.

### **Loose Riprap**

1. Distribute and manipulate the stones in a manner that the larger rock fragments are uniformly distributed and that the smaller rock fragments fill the space between the larger fragments.
2. Ensure that the toe of the slope is embedded to protect against undercutting.

### **Hand-Placed Riprap**

1. Place and bed the stones keying them together and filling irregularities between the stones with suitable size stones that are tight in place.
2. Provide a uniform surface when complete.
3. Embed riprap below the ground.

## Compacted Riprap

Compact properly placed loose riprap that is free of any protrusions greater than 3" in height.

## Plated Riprap

1. Compact properly placed loose riprap by repeatedly striking the surface with a steel plate, approximately 5'x 5' and weighing approximately 6000 lbs, and dropping from a height of 3-5 feet.
2. Compaction is complete when a uniform surface is free of protrusions greater than 4 inches.

<b>RIPRAP</b>			
<b>SPEC</b>	<b>INSPECTION LEVEL</b>	<b>INSPECTION OBJECTIVE</b>	<b>INSPECTOR ACTIVITY</b>
02373	Submittals	Ensure that samples/ submittals are in for rock source, Wear and Soundness tests.	Check with lab / office
		Ensure that cert's are in for geotextile fabric.	Obtain cert's from contractor
02373	Subgrade Prep.	Provide a firm subgrade	Visual inspection & documentation
02373	Intermittent	Ensure proper installation of rock and quality of rock	Visual Inspection & documentaion

## **Chapter 11 -Grouted Riprap – 02374**

### **General:**

Materials requirements and procedures for furnishing, transporting, and installing of grouted riprap and all related materials.

### **Related Sections:**

03055: Portland Cement Concrete

### **Checklist**

1. Has material source been accepted?
2. Samples for quality assurance
3. Grout mix design
4. Free of clay or similar material

### **Preparation**

1. Install surface and ground water control measures to ensure dry conditions to work in.
2. Remove all topsoil, loose excavated materials, vegetative debris, concrete debris, and other objectionable materials from beneath the areas where the grouted riprap is to be placed.
3. Make sure natural drainage areas are not compromised.
4. Compact sub grade to 95 % of a T-99 Proctor, or 70% of a T-180 Proctor.
5. Install a free draining bedding layer around the weep drains and provide sufficient cover to prevent crushing.

### **Placement of Bedding Materials**

1. Overlap geotextile fabric a minimum of 18”.
2. Overlap the upstream geotextile over the downstream layer.
3. Check for damage to the geotextile.
4. Maintain 3” minimum bedding aggregate over fabric.

## **Placement of Riprap Materials**

1. Distribute large stones uniformly to provide adequate access for the grout to the lower portions of the stone to prevent voids from forming.
2. Check for minimum thickness and height indicated.
3. Remove any stones protruding more than 10% of the stone layer thickness.
4. Begin placing stones at the lowest point.
5. Provide 3" diameter pipe weep holes penetrating the bedding with an average spacing of not more than 10 feet on center at the toe of the slopes.
6. Form all outer edges so that they are even with the adjacent slope or ground.

## **Riprap Grouting**

1. Do not place grout when temperature is less than 40 degrees F.
2. Maintain minimum of 50 degrees F. and maximum 90 degrees F. during placement and curing period.
3. Do not place on frozen surface
4. Cover and heat the stones between 50 degrees F and 90 degrees F for 24 hours prior to grouting when temperature is to drop below 40 degrees F.
5. Thoroughly wet riprap to a saturated surface condition.
6. Inject grout with a low pressure 2" max hose.
7. Place grout from bottom to top between stones leaving no voids. Grout must penetrate to the subgrade.
8. Use a "pencil" vibrator to fill all voids between and under stones
9. Leave top of stones fully exposed
10. Remove all excess grout immediately
11. Construct the grouted riprap to have a rustic appearance

## **Curing and Protection**

Keep all exposed surfaces continuously moist for 7 days and protect from becoming damaged.



<b>GROUTED RIPRAP</b>			
<b>SPEC</b>	<b>INSPECTION LEVEL</b>	<b>INSPECTION OBJECTIVE</b>	<b>INSPECTOR ACTIVITY</b>
02374	Submittals	Ensure that samples/ submittals are in for rock source, Wear, Soundness tests, and grout mix design	Check with lab / office
02374	Subgrade Prep.	Ensure that cert's are in for all other materials.  Provide a compacted subgrade, 95% of a T-99 proctor	Obtain cert's from contractor  Perform density test and documentation
02374	Intermittent	Proper installation of fabric, rock, and grout.	Visual inspection and documentation

**RIP RAP – Check List**

<b>Confirming</b>	<b>Attributes</b>
YES ( ) NO ( ) N/A ( )	Reviewed assigned functions and then reviewed the contract plans, specifications, and special provisions, noting all provisions applicable to the assigned responsibilities.
YES ( ) NO ( ) N/A ( )	Contractor has submitted data showing riprap source gradation, ware and soundness and placement technique 10 days before use.
YES ( ) NO ( ) N/A ( )	Contractor has submitted a sample for Quality Assurance Testing before use.
YES ( ) NO ( ) N/A ( )	All brush, trees, stumps and other objectionable materials have been removed
YES ( ) NO ( ) N/A ( )	Provide a firm foundation by excavating to a dressed uniform surface conforming to the lines and grades shown in the plans
YES ( ) NO ( ) N/A ( )	Ensure that any Geotextile or Wire has a Certificate of Compliance before placement.
YES ( ) NO ( ) N/A ( )	Complete the Measurement of payment for this Item and have completed Measurement and Documented these measurements.
YES ( ) NO ( ) N/A ( )	Completed a Daily Diary on all events for the day.
YES ( ) NO ( ) N/A ( )	Have reviewed all documentation / Certifications and handed all information into the Resident Engineers office.

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## **CHAPTER 13 - Pipe, Pipe-Arch, Structural Plate Pipe, and Structural Pipe Arch-02610S**

### **General:**

The life of a roadway depends largely upon proper drainage. Pipes are a key component of the drainage systems built on a project. It is necessary to inspect the drainage facilities to ensure proper sizing and quality of construction.

Certification required for delivery of pipe to the project site is a manufacturer's certification of compliance with original signatures, HDPE pipe needs to have a NTPEP (National Transportation Product Evaluation Program) enrollment certification from the supplier, and if the pipe is coated a certification of compliance certifying the coating thickness. Refer to Section 02610S and the Minimum Sampling and Testing Guide for detailed guidance on materials certification. Do not accept any damaged pipe.

Proper placement of the pipe is critical to the drainage system operating correctly. The inspector must understand the information on the offset survey stakes and check for proper placement of drainage items. Be sure the system will drain the intended area. As excavation progresses, check line and grade. Bedding material and placement shall be accepted in accordance with requirements shown in the Standard Drawings DG 5 & 6. Placed bedding material should be smooth and free of protruding rocks and conform to the surveyed grade. If excavation violates OSHA safety standards by not using a trench box or shoring, notify the Contractor and report the condition to the Senior Inspector or the Resident Engineer. The bottom of the pipe should be completely supported by the bedding material. If bell and spigot or coupling joints are used, there should be an adequate excavation to receive the joint. Laying the pipe shall begin at the downstream end of the culvert with the groove ends facing upstream, place bell or socket end facing upstream. The flow line of the pipe shall be placed at the surveyed line and grade. Close the joints in accordance with manufacturer's recommendations.

Backfill shall consist of granular or other fine, readily compactable material that shall not contain rock larger than 2 inches in size, nor frozen lumps, clay, or other objectionable material. Refer to the standard drawing DG 5. The material shall be properly moistened and compacted in successive 6 inch lifts of pre-compacted materials by means of a mechanical tamping device approved by the Resident Engineer. The material shall be compacted to the required density. Excessive water in the material or jetting will not be permitted. The backfilling operation shall proceed upward simultaneously on each side of the pipe. The

material under the haunches of the pipe shall be thoroughly compacted, being careful not to float the pipe. When the top of the pipe is exposed above the top of the trench, embankment material shall be placed and compacted by mechanical tamping as above for a width on each side of the pipe equal to at least twice the horizontal inside diameter of the pipe or 3 feet whichever is less. The embankment material within this distance and 1 foot over the top shall be of the same material as specified above for trench backfill. The remainder of the adjacent side fill may be regular embankment material and can be compacted with power equipment as long as it can be done with no damage to the pipe. The adjacent side fill shall be placed and compacted to a minimum width of two diameters of the pipe or 12 ft, whichever is less, prior to use by traffic or construction equipment.

Refer to Section 1.6 of 02610S for acceptance criteria once pipe has been placed.

### **Related Sections:**

00820: Legal Relations and Responsibility to Public

02317: Structural Excavation

02330: Embankment

03055: Portland Cement Concrete

03310: Structural Concrete

## **I. Definitions**

Pipe and Pipe Arch are identified according to diameter or by span and rise. Corrosion Classes are defined as follows:

1. Class A: Pipe used in mostly non-reactive soils, which require no special materials, treatments, or coatings.
2. Class B: Pipe used in moderately reactive and corrosive soils.
3. Class C: Pipe used in soils which are highly reactive and corrosive.
4. Class D: Untreated structural plate pipe used in mostly non-reactive and non-corrosive soils.
5. Class E: Structural plate pipe used in highly reactive and corrosive soils.

See Section 1.4 of 0210S for additional definitions.

<b>Pipe, Pipe-Arch, Structural Plate Pipe, and Structural Pipe Arch</b>
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SPEC	INSPECTION LEVEL	INSPECTION OBJECTIVE	INSPECTOR ACTIVITY
02610S	Important	Ensure all manufactured materials are certified as per UDOT standards.	Procure and file all required certificates of compliance.
	Intermittent	Ensure pipe and other components are placed in correct locations.	Check placement locations against survey stake information and document results.
	Intermittent	Ensure excavation and bedding are executed properly and according to standards.	Document all activities in daily diary or electronic field book.
	Intermittent	Ensure bedding and backfill are compacted to 96% maximum laboratory density and placed in 6 in lifts.	Document equipment and manpower utilized. Document density results with random locations.
	Important	Determine pay quantities.	Measure and document length of pipe placed and placed quantity of related items.
	Intermittent	Ensure conditions of Section 1.6 of 02610S are met.	Document as per specifications.

**PIPE, PIPE-ARCH, STRUCTURAL - Check List**

<b>Confirming</b>	<b>Attributes</b>
YES ( ) NO ( ) N/A ( )	Reviewed assigned functions and then reviewed the contract plans, specifications, and special provisions, noting all provisions applicable to the assigned responsibilities.
YES ( ) NO ( ) N/A ( )	Review Survey Stakes for Elevation and alignment of pipe.
YES ( ) NO ( ) N/A ( )	Ensure base for pipe is solid and well graded and compacted.
YES ( ) NO ( ) N/A ( )	The inspector before placement has received Manufactures Certificate of Compliance for quantity to be placed.
YES ( ) NO ( ) N/A ( )	While digging trench for pipe, Safety has been provided with safety slope or Trench box
YES ( ) NO ( ) N/A ( )	When placement of pipe with a bell. Bell holes have been dug, so that pipe is not resting on the bell of pipe.
YES ( ) NO ( ) N/A ( )	Material is placed and compacted around haunches of pipe before backfilling begins. With proper thickness of each lift and optimum moisture in material.
YES ( ) NO ( ) N/A ( )	Completion of Daily Diary and completion of Measurement for field book or Ipaq. Complete with all pertinent information



Item # 21		PIPE CULVERT CLASS A			24 INCH	Eng'r Party	Date Weather
Date	Station	Station	Lin Ft.	Verified By			
4/15/2006	15 + 50 Rt.	16 + 25 Rt.	75 lin. Ft.	RLJ	<p>Clean-out-box # 18 16 + 25</p> <p>Clean - out- box # 19 15 + 55</p> <p>75 lin ft</p> <p>NOTE: Measurement are taken from outside of box.</p>		

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## **CHAPTER 14 - Hot Mix Asphalt-Bike Path HMA-OGSC-SMA- Sections 02741-02743-02786-02744S**

### **General :**

Asphalt concrete pavement, OGSC (Open Graded Surface Course), and SMA (Stone Matrix Asphalt) are used extensively for paving highways and streets. Achieving a durable and high level of performance with these products requires careful attention during the site preparation, mixing, transporting, placing, and compaction processes. Good inspection and testing practices will result in a smooth riding and durable pavement.

In preparation for paving, a pre-paving conference should be scheduled and held involving the Resident Engineer and his crew as well as the contractor's /sub-contractor's and material supplier's personnel who will be involved in the mix production and paving operations. The following items should be considered for the conference agenda:

1. Discuss the mix design and confirm its' approval.
2. Review specification requirements with close attention to limitations and testing/acceptance requirements.
3. Review paving contractor's planned paving operations consider if sufficient number and type of equipment and good practice is being provided.
4. Plant Inspection.
5. Identify key personnel and their roles.
6. Review of traffic control plan specific to paving operations.
7. Discuss potential problems and solutions.

For guidance on application of prime and tack coats please see Chapter 6 of this manual.

The paving Contractor should carefully check each piece of equipment to be used during the paving operation. The quality of work produced is greatly affected by the condition of the equipment. If the equipment is in poor condition, work of poor quality is to be expected.

The paving Inspector should become familiar with the operation procedures for the following pieces of equipment so that potential problems can be caught early. The following are things to check on specific equipment:

#### **A. The Asphalt Distributor Checklist**

1. Heaters and pump should be in good working condition

2. All gauges, measuring devices and tachometers should all be calibrated
3. Spray bars and nozzles unclogged and set for proper application
4. Is there a thermometer that indicates the temperature of the material?
5. Paving Inspector is to check for proper application of asphalt material.

#### B. Paver Checklist

1. Does the paver comply with specifications?
2. Is the Governor on the engine operating properly?
3. Are the slat feeders, the hopper gates, and spreader screws in good adjustment?
4. Are the wheeled tracks operating properly?
5. Is the screed heater working properly?
6. Are the tamper bars correctly adjusted for stroke and for clearance between the back of the bar and the nose of the screed plate?
7. Are the surfaces of the screed plates true and in good condition?
8. Are mat thickness and crown controls in good condition and adjustment?
9. Are the screed vibrators in good condition and adjusted. Is the oscillating screed in proper position with respect to the vibrating compactor?
10. Generally a Materials Transfer Vehicle (shuttle buggy) is used to transfer the hot mix to the paver. Is it operating smoothly?

#### C. Steel Rollers Checklist

1. Roller should be in good running condition
2. No excessive wear in steering
3. Scraping bars and wetting pads should be checked
4. Drums should be checked for beads or distortions and water tightness
5. Are vibrators working properly
6. Inspector is to check for smoothness during operation (starting, stopping, and reversing)

#### D. Pneumatic Rollers Checklist

1. Roller should be in good running condition
2. No excessive wear in steering
3. Roller tires should be checked for uniform pressure, size and ply. Tires are to be smooth, with no tread
4. Do average contact pressures of pneumatic-tired rollers comply

with specifications?

#### E. Hauling Equipment Checklist

1. Are trucks equipped with tarpaulins?
2. For cold weather or long hauls, are truck beds insulated?
3. Are trucks clean, no material from previous use?

The following are to be considered in inspecting the mix and its' placement.

#### A. Acceptance and Rejection of Mix

After the mix design is established and approved by the Region Materials Engineer for the project. It is the responsibility of the paving inspector and lab technician to check the following to insure that the mix delivered to the project meets the requirements of the mix design.

1. Asphalt Content.
2. Gradation.
3. Temperature (Mixing and Laydown, Rolling).
4. Uniformity of Mix (See that all aggregate is properly coated, well graded and that no segregation occurs).
5. See that there is no excessive asphalt in mix.

The inspector should notify the contractor's foreman or superintendent when rejecting mix as well as the Level IV Inspector and/or Resident Engineer.

#### B. Reasons for Rejection

1. Is the load thoroughly mixed? (Properly coated)
2. Temperature (does the temperature exceed the maximum/minimum mix design temp?)
3. Too lean or too rich (% of Bitumen)
4. Uniformity of aggregate and mixing (gradation, segregation)
5. Incorrect mix type (3/4", 1/2", OGSC etc.)
6. Contamination
7. Incorrect information on ticket (date, project number, location, mix design etc.)

#### C. Observe and evaluate mix, look for the following:

1. Proper proportions

- a. Excess fine aggregate in mix will cause a lean, brown, dull appearance.
  - b. Too little asphalt in mix will cause a lean, granular, dull appearance.
  - c. Too much asphalt in mix will cause a shiny, slick, and greasy look.
  - d. A cold mix will have a stiff appearance and possibly uncoated aggregate.
2. Is material properly coated?
- a. If not, material may need longer mixing time.
  - b. Material may be too high in fines content.
  - c. Material needs more asphalt.
3. Excessive moisture in mix.
- a. May have some bubbling or boiling from free moisture in mix.
  - b. Steam clouds may be visible on mat or while dumping truck.
4. Segregation
- a. Material in hopper has tendency to separate along outside and on gate hopper. This material should not be incorporated into the mix.
  - b. Auger distributing material evenly.
  - c. Cold screed board.
  - d. Improper head of material covering Auger (top of Auger should be visible at all times, but the head of the asphalt material should be no lower than just below the auger's top).
  - e. Gates should be properly adjusted.
5. Contamination
- a. Watch for diesel oil leaks either from trucks or lay down machine.
  - b. Dirt from truck wheels or other sources.
  - c. Foreign objects such as rags, papers, grass, large rocks, weeds, and all unwanted organic matter.
  - d. Diesel fuel should not be used as a release agent on any of the contractor's equipment used in paving operations.

## D. Paving Procedures

### 1. Rolling Procedures

- a. Roll from the outside to the inside of the mat, one-half width of roller overlapping. Contractor should establish rolling pattern with QC personnel monitoring compaction with nuclear density gauge. Observe process and advise Level IV Technician or Engineer of any problems.
- b. Prolonged stopping of roller on hot mat should be avoided.
- c. Gradual stops recommended. Quick stops are discouraged.
- d. All rollers must operate smoothly from forward to stop and to reverse.
- e. Proper turning at end of roller travel (steel wheel).
- f. Roller picking up material from mat.

- (1) May be lack of water on rollers.
- (2) Roller or tires too cold.
- (3) May pick up foreign substance (such as dirt, tack coat, etc.).
- (4) Bituminous surface may be too hot.

### 2. Cooling crosswinds affect rolling operations.

- a. Shield machine with skirting.
- b. Keep roller closer to lay down machine.
- c. Add additional, roller to speed up operations.

### 3. Temperature

- a. Temperature: When temperature of the air, in the shade, is below 50 degrees F for HMA/SMA or 60 degrees F for OGSC do not lay any asphalt material. Recommended mix temperatures for compaction are provided in the mix design. Check and document the mix temperature in trucks, windrow, and behind the paver.

### 4. Longitudinal and Transverse Joints

- a. Observe and ensure that lay down machine is laying a straight line and grade. The Paver leaves a straight and vertical edge adjacent to the next lane to be paved, when more than one pass is required to cover the width of the roadway. Completely compact each pass and tack the longitudinal edge



prior to placing the adjacent pass.

- (1) Seam should be straight and matching mat in depth at joint.
  - (2) Temperature should be checked and recorded.
  - (3) Proper rolling should be exercised when rolling into adjacent lift.
- b. Transverse joints. All passes should be brought up even, transversely, at the end of each production day.
- (1) Contractor will place paper or other material at end of lift.
  - (2) To start, remove end material, tack new joint and resume paving, matching previously constructed end.
  - (3) Cut back transverse joint from preceding day if cut does not measure the full specified depth.
  - (4) Start off by tacking new joint and placing sufficient new material to match previous joint.
  - (5) Roll across joint first, then diagonally to finish.

Best use of lay down machine is to have continuous travel. Contractor should avoid hurry up and wait operation. The Contractor should have sufficient rollers at all times to keep pace with the paver's progress.

If any problems are noted, the responsible person for the contractor should be immediately notified as well as the level IV inspector. Remedy the problem before resuming or proceeding with paving operations.

The Inspector should keep careful documentation of the paving activities making sure to cover the following areas:

- A. Always keep a Project Diary up to date in the IPAQ or hardbound books.
  1. At the beginning of a diary, fill out all spaces applying to job, including inspector's signature and date.
  2. Keep diary neat. The diary may be used in court.
  3. Keep accurate daily information such as day and date, stationing, project name and number, and weather. Include notes of interest or special importance, such as discussions with the contractor representative. List all discrepancies, disagreements, and failures of contractor or representative to comply with specifications.

Variations, in machine operation, not complying with specifications Accidents or public related grievances. Any personal observations and include project stationing and any other information needed to back up you documentation.

4. Keep accurate and concise records of quantities of daily operation. i.e. tons, cubic yards, feet lateral and transverse, square yards, gallons, pounds, etc.
5. Check and obtain signed vendors certificates, certificates of compliance and document temperatures, grade, type, plant tickets, etc.
6. Record number of workers, equipment, weather, starting and ending time, and daily operation.
7. Document any Certificates received.
8. On the plant ticket, record the delivery temperatures of mix and initial the ticket noting verification of project location, name, and number as well as approved mix type. Turn tickets into Level IV inspector each day.

Sampling is as important as the actual testing performed on the samples. The inspector should be TTQP certified in the sampling/density module before procuring samples for acceptance. Refer to the UDOT Manual of Instruction Part 8 Materials, Sections 981, 984, and 985 for specific directions on random number generation, sampling, and sample reduction procedures. The inspector may be responsible for determining and marking out random test locations for acceptance samples, the method used as well as any data used to generate the offset and station locations should be recorded in writing and turned into the Level IV Lab Technician for inclusion in project documentation. Sample PG graded asphalt cement as outlined in QMP 509.

**Plant Inspection:** The inspector should carefully review Sections 01280 and 01455 1.9 of the standard specifications as well QMP 509 with the Resident Engineer prior to paving operations beginning. The inspector may be required to witness and document three 1 qt samples being taken, accepting 2 of those samples of the PG Grade asphalt cement used in the mix for each production day for submittal as acceptance samples. This provides an opportunity to ensure that the requirements in Sections 01280 and 01455 1.9 are being met on a regular basis.

**Note:** The Bike Path HMA acceptance requirements are significantly reduced review Section 02743 when placing this item.

## **Related Sections:**

01280: Measurement

01452: Profilograph and Pavement Smoothness

01455: Material Quality Requirements

02742S: Project Specific Surfacing Requirements

02745: Asphalt Material

02746: Hydrated Lime

02748: Prime Coat/Tack Coat

02969: Optional Use of Reclaimed Asphalt Pavement (PG Binder Projects Only)

QMP 509

QMP 510

**References:**

Principles of Construction of Hot-Mix Asphalt Pavements;  
Asphalt Institute MS-22  
Hot Mix Asphalt Paving Handbook 2000; US Army Corp of Engineers  
Designing and Constructing SMA Mixtures-State of the Art Practice;  
NAPA Quality Improvement Series 122

<b>HMA, OGSC, and SMA</b>
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SPEC	INSPECTION LEVEL	INSPECTION OBJECTIVE	INSPECTOR ACTIVITY
02741 02743 02786 02744S	Important	Prepare for Paving Operations. Confirm approved Mix Design.	Attend and participate in Pre-paving conference.
	Important	Ensure surface to be paved is properly prepared.	Inspect base and/or existing/rotomilled surface to see they meet plan & specification requirements. Document findings in diary and reports.
	Important	Ensure equipment and processes in the field are as discussed in pre-paving conference.	Observe equipment, manpower, and level of contractor's preparedness and execution. Observe mix characteristics and mat appearance. Document all information and limits of paving operations. Inform RE of any problems.
	Important	Ensure all required documentation, acceptance samples, and certification are procured, submitted and properly filed.	Procure batch tickets, check to make sure they are properly filled out, take and record temperatures of mix as delivered and behind the paver, establish and mark acceptance sample locations, procure samples if certified or receive from certified

	Important	Ensure that PG Asphalt Cement Samples are taken and submitted and inspect production plant operations.	<p>technician, submit to the lab. Document all activities and submit properly completed sampling paperwork.</p> <p>Generate random sampling time, be present to witness and accept state PG Asphalt Cement samples, inspect plant operations, check for effective lime treatment, proper mixing temperatures/times, check for use of approved release agents. Submit samples to Central lab. Document all findings.</p>
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**HOT MIX ASPHALT – Check List**

<b>Confirming</b>	<b>Attributes</b>
YES ( ) NO ( ) N/A ( )	Reviewed assigned functions and then reviewed the contract plans, specifications, and special provisions, noting all provisions applicable to the assigned responsibilities.
YES ( ) NO ( ) N/A ( )	Ensure that the Hot Mix Asphalt has an approved mix design
YES ( ) NO ( ) N/A ( )	Traffic Control has been set to an approved traffic control plans and is safe for Paver, Roller, crew and Trucks leaving the paver.
YES ( ) NO ( ) N/A ( )	Each truck dumping has a weigh ticket and is collected by the Inspector.
YES ( ) NO ( ) N/A ( )	Temperatures are taken on the HMA to assure proper paving temperature. This is recorded on the weigh ticket along with station of that load.
YES ( ) NO ( ) N/A ( )	Ensure that proper thickness has been placed.
YES ( ) NO ( ) N/A ( )	Any mix that is segregated or not coated will not be paid for and the Resident Engineer is immediately informed.
YES ( ) NO ( ) N/A ( )	Ensure any rough or imperfections that appear behind the paver are fixed before they are rolled
YES ( ) NO ( ) N/A ( )	Document all information: Date, weather, times of any breakdowns, areas that contractor was informed of segregation etc, all equipment

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## **Chapter 15 - Prime Coat and Tack Coat-Section 02748**

### **General:**

A prime coat consists of applying a low viscosity bituminous material, usually an MC-70 or 250 at a specified rate to a base course. Its' purpose is to penetrate the existing surface, coating and bonding any loose particles to the surface, provide a dust free surface as well as promoting adhesion between the existing surface and asphalt mix courses.

A tack coat consists of applying a bituminous material, usually a CSS-1h or SS-1h at a specified rate to an existing asphalt pavement ensuring a bond between the old and new courses.

Proper cure time must be allowed in each case before construction traffic is allowed onto primed or tacked surfaces. A blotter material meeting requirements found in Section 02748 may be necessary for primed surfaces if an excess of prime coat is placed. Avoid public traffic on these surfaces if possible, and if necessary only after the applications have properly cured and been blotted if required.

Before the application of prime on the base course, it is extremely important, that the inspector checks and approves the area to be primed. (See Chapter 4, Base Courses). Before application of the tack coat on existing or rotomilled asphalt pavement it is important to make any necessary patches, fill potholes, seal cracks, and clean pavement surface with multiple passes of a power broom. The material applied, as a tack or prime coat, using an approved distributor, will be as specified in the plans or specifications. The application rate will be specified in the plans or as directed by the Resident Engineer. As a point of information note that most of the tack coat material used is emulsified asphalt, it is desired that a specific residual asphalt amount will remain after the water has dissipated hence the specified application rate in the plans. If water is added to the base emulsion by the contractor or supplier the residual asphalt amount will be changed, the inspector should check to see any water added to the base emulsion is in accordance with specifications. The asphalt distributor, used to apply the prime, tack coat, and/or fog seal, consists of a truck or a trailer, on which is mounted an insulated tank and heating system. The distributor is supplied with a power driven pump, designed to handle products ranging from light cold application liquid asphalt to heavy cements heated to spraying viscosity. The back of the tank is fitted with a system of spray bars and nozzles through which the asphalt is forced under pressure. The spray bars should be capable of spraying an application width up to 12 feet. A thermometer is installed in the tank for quick and easy determination of the product temperature.

The liquid asphalt is distributed over the surface uniformly, at the desired rate of application. The Contractor makes sure that the heater; pump, thermometer, and gauges are in good working order. He also ensures that the spray bar and nozzles are at the proper angle and height above the road for correct application. Generally the proper angle for the nozzles is 15 to 30 degrees with relation to the horizontal axis of the spray bar, with a resulting spray overlap resulting in double coverage. “Tiger striping” is an indication that the sprayer system either is not properly adjusted or not working properly.

**Related Sections:**

01554: Traffic Control

02324: Compaction

02745: Asphalt Material

QMP 508

<b>Prime Coat and Tack Coat</b>
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SPEC	INSPECTION LEVEL	INSPECTION OBJECTIVE	INSPECTOR ACTIVITY
02748	Important	Ensure all surfaces are properly prepared.	Inspect and document surface conditions prior to treatment.
	Important	Ensure all manufactured material is certified as per UDOT standards.	Procure and file manufacture's certified scale weight tickets for payment. Be familiar with and follow QMP 508.
	Important	Ensure correct material is being placed at the proper application rate under the conditions required in the specifications.	Inspect contractor's equipment, check material temperatures, at start-up review results and determine if adjustment to application rates need to be done and if equipment is operating properly. Take 1 qt sample if product appearance or behavior is questionable. Document all activities in daily diary or electronic field book.
	Intermittent	Ensure that all prime or tack coat has been properly applied.	Document all activities in daily diary or electronic field book.

**PRIME COAT – TACK COAT – Check List**

<b>Confirming</b>	<b>Attributes</b>
YES ( ) NO ( ) N/A ( )	Reviewed assigned functions and then reviewed the contract plans, specifications, and special provisions, noting all provisions applicable to the assigned responsibilities.
YES ( ) NO ( ) N/A ( )	Inspect and document surface conditions prior to treatment.
YES ( ) NO ( ) N/A ( )	Ensure all manufactured material is certified as per UDOT standards
YES ( ) NO ( ) N/A ( )	Ensure correct material is being placed at the proper application rate under the conditions required in the specifications.
YES ( ) NO ( ) N/A ( )	Ensure that all prime or tack coat has been properly applied
YES ( ) NO ( ) N/A ( )	Ensure that excess Prime Coat or Tack coat has blotter material
YES ( ) NO ( ) N/A ( )	Completed a Daily Diary on all events for the day.
YES ( ) NO ( ) N/A ( )	Have reviewed all documentation / Certifications and handed all information into the Resident Engineers office.

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## **Chapter 21 – Environmental Protection**

### **I. Introduction**

Protection of environmental resources during the construction phase is vital. Often there are environmental commitments made that must be included in the construction phase of projects. Commitments may include installing erosion and sediment controls, avoiding sensitive areas, installing noise abatement measures and following permit conditions.

The purpose of this chapter is to provide basic guidance to inspectors on addressing environmental issues in the construction phase of projects.

### **II. References**

UDOT Standard Specifications:

Section 01355 : Environmental Protection

Section 01571: Temporary Environmental Controls

Section 01574: Environmental Control Supervisor

UDOT Standard Drawings:

EN 1, Temporary Erosion Control (Check Dams)

EN 2, Temporary Erosion Control (Silt Fence)

EN 3, Temporary Erosion Control (Slope Drain and Temporary Berm)

EN 4, Temporary Erosion Control (Drop Inlet Barriers)

EN 5, Temporary Erosion Control (Pipe Inlet And Curb Inlet Barriers)

EN 6, Temporary Erosion Control (Sediment Trap and Stabilized Construction Entrance)

EN 7, Temporary Erosion Control (Straw Bale Barrier)

### **III. Responsibilities**

#### **A. General**

- Prevent pollution of streams, lakes, ponds and reservoirs with sediment, fuels, oils, bitumens, chemicals or other harmful materials and pollution of the atmosphere from particulates and gaseous matter.
- Keep the project in environmental compliance. Obtain environmental clearances for off-site work activities.
- Use Best Management Practices to prevent hazardous material releases by segregating wastes, providing secondary containment and having spill kits and absorbents available for use.
- Implement all environmental mitigation commitments associated with the project.

## **B. Environmental Clearances**

Verify or obtain the necessary environmental clearances before commencing project activities or when adding or selecting any ground- or resource-disturbing features such as material (gravel, borrow or waste) sites, equipment staging sites, office sites, water lines, holding ponds, etc. Environmental clearances include:

- Cultural and Paleontological
- Threatened and Endangered Species
- Wetlands
- Floodplains
- Prime, Unique and Important Farmland
- Water Resource Permits

## **C. Water Resource Permits**

Obtain all permits required for the project and fully read all permits and associated special conditions before beginning construction activities. Water resource permits may include the following:

**404 Wetland Permit** - Necessary in order to discharge dredged or fill material into wetlands or other special aquatic sites. This permit is also needed for re-channelizing rivers, streams or creeks. The permit will outline mitigation and monitoring requirements and other special conditions that must be followed.

- I. Stream Alteration Permit** - **Necessary in order to modify or alter a natural stream channel. A natural stream channel is defined as a natural drainage feature with a defined bed and bank independent of flow. Modification or alteration activities may include bridge crossings, bank stabilization, scour mitigation, spur dike installation, etc. The permit will outline special conditions that must be followed during construction. This permit must be obtained prior to advertising the project for construction.**

**Utah Pollutant Discharge Elimination System (UPDES) Permit** - Necessary for all projects that will disturb more than 1 acre of surface area. This general permit authorizes the permittee to discharge storm water from a specified construction site as long as appropriate BMP's are installed.



**Flood Plain Encroachment Permit** - Necessary for all construction activities or alterations to existing structures within the base flood plain (100 year event). Alteration is defined as any man-made change to improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations.

#### **D. Temporary Environmental Controls**

Follow the Storm Water Pollution Prevention Plan prepared for the project. Ensure that all temporary environmental controls are installed prior to beginning construction activities. These controls may include:

**Erosion Control BMP's** – Check Dams, Silt Fence, Slope Drain, Temporary Berm, Drop Inlet Barrier, Pipe Inlet & Curb Inlet Barrier, Sediment Trap, Stabilized Construction Entrance and Straw Bale Barrier. Follow installation procedures outlined in the Standard Drawings.

**Material Storage & Containment** – Segregate wastes by type and provide adequate secondary containment for fuel storage and other chemical storage facilities. Have emergency spill kits and absorbents on hand in case small releases occur.

**Maintenance of BMP's and Containment Systems** – Maintain all erosion controls and containment systems until the project area is stabilized. Remove and dispose of sediment and other types of excess materials and wastes in approved locations and in accordance with state and federal laws.

#### **E. Discoveries During Construction**

**Hazardous Materials** - Immediately suspend work in the area and notify your supervisor if abnormal conditions are encountered or exposed during construction that indicates the presence of a hazardous material, toxic or hazardous waste. Abnormal conditions shall include, but not be limited to, the following: presence of barrels; buried storage tanks; above ground tanks; obnoxious odors; excessively hot earth; stained and discolored soils; smoke; unidentifiable powders, sludges, pellets; or any other condition that could be a possible indicator of hazardous material, toxic or hazardous waste. Treat all substances encountered with extreme caution.

Dispose of the hazardous material, toxic or hazardous waste under the requirements and regulations of the Utah State Department of Environmental Quality and United State Environmental Protection Agency.

**Historical, Archeological or Paleontological Objects -**

Immediately suspend construction operations in the vicinity of the discovery if a suspected historic, archeological or paleontological item, feature, prehistoric dwelling sites or artifacts of historic or archeological significance are encountered. Notify your supervisor and the UDOT Region Archeologist of the nature and exact location of the findings. Protect all discovered objects.

## Environmental Protection

SPEC	INSPECTION LEVEL	INSPECTION OBJECTIVE	INSPECTOR ACTIVITY
01554	Important	<p>Ensure the safety of the traveling Public</p> <p>Ensure Traffic Control plan has been approved.</p> <p>Ensure devices and systems meet NCHRP-350 report requirements</p> <p>Ensure traffic signs conform to the MUTCD.</p> <p>Ensure Traffic Control Maintainer is Certified by the Department or American Traffic Safety Services Association (ATSSA)</p> <p>Flaggers have a current flagging certificate and must present proof of certification upon request by the Department.</p>	<p>Before erecting signs: Inspect condition of sign panels and supports and any allowable repairs that have been made.</p> <p>Perform and document nighttime inspection to verify that sign has proper illumination</p> <p>Traffic Control Maintainer has completed a daily record of traffic control activities using a form acceptable to the Resident Engineer Form C-110</p> <p>Inspector has made a daily note in his/her diary on the traffic control and condition of roadway.</p>

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**CHAPTER – 22 Civil Rights, Labor, and DBE**

Insert in “General Inspection” section:

1. Ability to communicate with and to interview contractor and subcontractor’s employees.

Insert in “Preparation For Inspection:” section:

1. Inspector discusses with Resident Engineer, Office Manager, or Office Tech IV the Civil Rights, DBE and Labor requirements for the assigned Federally funded project, including:
  - a. DBE subcontractors including race conscious and race neutral.
  - b. Trucking subcontractors hauling on the site-of-work.
  - c. DBE trucking subcontractor, if there is one.
  - d. Trucking Owner/Operators, if any.
  - e. Subcontractors (all other).
  - f. Contractor’s Trainee/Apprentices and ratio requirements.
  - g. Forms: C-131 EEO Bulletin Board Project Review; C-136 Labor and EEO Interview of Workers; C-141 Commercially Useful Function Report (CUF); FHWA 1273 Required Contract Provisions Federal-Aid Construction Contracts.

Insert after “Electronic Field Book (Ipaq’s)” section:

**Civil Rights, Labor and Disadvantaged Business Enterprises (DBE):**

1. Review FHWA 1273 document to become familiar with the Federal EEO and Labor requirements for Federal Aid projects. Review Special Provision contained in contract, XII. Bid Conditions Disadvantaged Business Enterprise (DBE) section F Counting DBE Participation Toward Goals for Performance. Review form C-141 Commercially Useful Function Report for information regarding DBE performance.
2. The inspector must be aware of disparate treatment, discrimination, or harassment, intimidation or coercion occurring on the project. If any is observed, the Resident Engineer (RE), Tech IV, or Office Manager must be notified.
3. The inspector may be assigned to do Labor and EEO interviews of contractor employees using form C-136. Interviews must be taken

during working hours and not during lunch or breaks. Due to the confidentiality of the interviews, they are to be done away from other employees and a contractor's supervisor or foreman may not be present. All information given by the employee must be held in the strictest confidence, to only be seen by representatives of the STA, FHWA, or USDOL.

4. The inspector must be aware of the trucking operation being performed on the project, noting if the hauling is being done directly on the site-of-work. If hauling is directly on the site-of-work, employees of the trucking firm are to be interviewed. If hauling is done by Owner/Operators, directly on the site-of-work, inspector must check drivers license of driver with registration of truck to ensure the owner and driver are the same. If they are not, Resident Engineer must be notified. If DBE subcontractor does hauling, trucks must be identified with company name or logo.
5. The inspector must be aware of the operation of the DBE performing on the project. See form C-141 regarding what to watch for. If assigned by the RE, use form C-141 for performance report.
6. The inspector must be aware of work being done by different subcontractors and contractor employees. On a random basis, note type of work being done, company doing the work, and date, and report such to Tech IV or Office Manager so payrolls may be checked to see if employees are being classified correctly and if correct wages are being paid.
7. Contractor or subcontractor employee to report a complaint may approach inspector. Get employee name, company worked for, complaint and date of occurrence as well as date reported to inspector. Information given by the employee is held in strictest of confidence and must be reported to the RE, Tech IV, or Office Manager immediately. Do not promise the employee anything other than STA will check into the situation.
8. Inspector must be aware of trainees or apprentices assigned to the project and make note of when they started working. Also observe work trainee or apprentice is doing to ensure being trained in proper program. Note whether correct ratio of journeyman vs. trainee or apprentice is complied with. Report any problems to the RE, Tech IV, or Office Manager.
9. Inspector may be assigned to do the contractor's bulletin board inspection. Use form C-131 to accomplish this task.

<b>Spec.</b>	<b>Inspection Level</b>	<b>Inspection Objective</b>	<b>Inspector Activity</b>
0820 1.18-1.19	Important	<p>Before trucking company begins work ensure trucking subcontracts are in place for on-site hauling, or, on Federal-aid project, hauling by DBE firm.</p> <p>Ensure DBE trucks are properly identified with name or logo of DBE company.</p> <p>Ensure employee driving truck is being paid correct wages for on-site hauling</p> <p>Ensure Owner/Operator, if hauling on site, is actual owner of truck being driven.</p>	<p>Check with UDOT project office for trucking subcontracts.</p> <p>Note when hauling starts for project, and by whom.</p> <p>Observe trucking operation for on-site hauling or if hauling is to and from project site.</p> <p>If hauling on site, interview truck driver to determine company doing hauling and the rate of pay for driver.</p> <p>If driver is owner / operator hauling on site, check registration of truck and driver's license to determine ownership of truck.</p>
DBE Special Provision	Important – Federal-aid projects	<p>Ensure DBE is doing own work with own employees.</p> <p>Ensure DBE is using own equipment.</p> <p>Ensure DBE has a Supervisor on project.</p>	<p>Complete CUF Form C-141.</p> <p>Interview DBE's employees regarding:</p> <ul style="list-style-type: none"> <li>• who they work for</li> <li>• type of work they are doing</li> </ul>



			<ul style="list-style-type: none"> <li>• who is supervisor</li> </ul>
00820 1.6	Important – Federal-aid projects	<p>Ensure there is no discrimination of contractor employees because of race, religion, color, sex, age, disability, or national origin.</p> <p>Ensure employees are aware of EEO and have been informed regarding harassment, intimidation and coercion.</p>	<p>Observe the employer/employee relationships while they perform work on the project. Watch for discrimination, foul language, and/or harassment.</p> <p>Using Form C-136 interview contractor employees.</p>
FHWA 1273 IV	Important – Federal-aid projects	Ensure contractor employees are being paid the correct wages, including overtime, for the classification of work being performed.	Interview contractor employees using Form C-136.
FHWA 1273 II 6	Important – Federal-aid projects	<p>Ensure trainee/apprentice employees are being trained in the classification designated in their certification.</p> <p>Ensure contractor is complying with ratio of journeyman to apprentice on daily basis.</p>	<p>Identify trainee/apprentices on the project.</p> <p>Observe and interview trainee/apprentices regarding OJT.</p> <p>Note journeyman present in each craft in which apprentices are employed.</p>

**NOTES:**

This image shows a blank sheet of white paper with horizontal ruling lines. On the left side, there are small black arrowheads pointing to the right, indicating the direction of writing. The lines are evenly spaced and extend across the width of the page. There is no handwriting or other markings on the paper.

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